

Attorney Docket #: P128-US

REMARKS

Claims 1-116 are pending. No claims stand allowed.

With this amendment, claims 1, 3, 4, 13, 14, 31, 33, 46, 60, 67, 69, and 89 are amended. Claim 51 is canceled; and new claims 117 and 188 are presented.

Rejection of claim 1

Independent claim 1 was rejected under 102(b) over True (US 2001/0040675), as evidenced by Wolf (*Silicon Processing for the VLSI Era, Vol. 1, Lattice Press (1986)*). It is respectfully submitted that claim 1 as amended is not disclosed or suggested by True or Wolf.

Claim 1 expressly recites, among other features, the steps of deflecting the deformable element with an electrostatic field; and oxidizing the deformable element in an oxygen-containing gas other than air while the deformable element is in the deflected state. These features are nowhere disclosed or suggested by True or Wolf.

True disclosed that the deformable hinge can be polysilicon (paragraph [0020]), and the deformable hinge can be exposed to the etchant, which can be dry oxygen plasma, during the fabrication. Even though Wolf evidenced that the polysilicon can be oxidized during plasma, the combination of True and Wolf does not teach or suggest the step of oxidizing the deformable element in an oxygen-containing gas other than air while the deformable element is in the deflected state.

Because True and Wolf fail in teaching or suggesting each and every features of claim 1, claim 1, as well as claims 2-26, is patentable over True and Wolf. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 27

Independent claim 27 was rejected over True and Wolf. It is respectfully submitted that claim 27 should be allowable in view of the allowed subject matter of claim 22. Claims 28-45 that depend from claim 27 are also allowable. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 46

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Rejection of claim 46

Independent claim 46 was rejected over True and Wolf. However, claim 51 was indicated as being allowable if rewritten into independent form including all limitations of the base claim and any intervening claims.

With this amendment, claim 46 is amended to incorporate the subject matter of allowable claim 51 so as to place claims 46, 47-50, and 52-68 into condition for allowance. Claim 51 is accordingly cancelled.

Rejection of claim 69

Independent claim 69 was rejected over True and Wolf. It is respectfully submitted that claim 69 as amended is not disclosed or suggested by True or Wolf for at least the same reasons as discussed above for claim 1. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 89

Independent claim 89 was rejected over True and Wolf. The rejection is traversed. However, claim 89 is amended to help the examination on merit.

Specifically, claim 89 as amended expressly recites, among other features, a step of oxidizing and patterning the hinge layer to form an oxidized hinge; and a step of removing the sacrificial layer after the step of oxidizing. As a comparison, True disclosed that the deformable hinge can be polysilicon (paragraph [0020]), and the deformable hinge can be exposed to the etchant, which can be dry oxygen plasma, during the fabrication. Even though Wolf evidenced that the polysilicon can be oxidized during plasma, the combination of True and Wolf does not teach or suggest oxidizing the hinge prior to the plasma etch. Because True and Wolf fail in disclosing or suggesting all features of claim 89 is patentable over True and Wolf. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 106

Claim 106 was rejected under 103 (a) over True and Wolf. This rejection is respectfully traversed.

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Claim 106 expressly recites, among other features, the steps of removing the sacrificial layer; and cleaning and oxidizing the micromirror device, further comprising: providing a gas that is an oxygen-containing gas other than air, the oxygen-containing gas cleaning the micromirror and oxidizing an amount of the material of the hinge equivalent to at least 25% in volume of the hinge. The combination of these steps are nowhere disclosed or suggested by the combination of True and Wolf.

As discussed above for claim 1, True discloses that the deformable hinge can be polysilicon, and the deformable hinge can be exposed to the etchant, which can be dry oxygen plasma, during the fabrication. Even in combination with Wolf, the combination at most suggests the possible oxidization of polysilicon materials during the etching process. Instead, True does not teach or suggest the step of cleaning and oxidizing the micromirror device, further comprising: providing a gas that is an oxygen-containing gas other than air, the oxygen-containing gas cleaning the micromirror and oxidizing an amount of the material of the hinge equivalent to at least 25% in volume of the hinge.

Because True and Wolf fail in teaching or suggesting all features of claim 106, claim 106, as well as claims 107-116, is patentable over True and Wolf. Reconsideration and withdrawal of the rejection are respectfully requested.

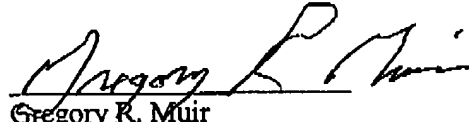
New claim 117 is the independent form of allowable claim 22 including all features of the base claim and any intermediate claims. Therefore, it is respectfully submitted that claim 117 is patentable.

New claim 118 is the independent form of allowable claim 24 including all features of the base claim and any intermediate claims. Therefore, it is respectfully submitted that claim 117 is patentable.

It is believed that this application is in condition for allowance. Favorable consideration and prompt allowance are respectfully requested. In the event any fees are required in connection with this paper, please charge our Deposit Account No. 501516.

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Respectfully submitted,

  
Gregory R. Muir  
Attorney for Applicant(s)  
Registration No. 35,293

Reflectivity, Inc.  
350 Potrero Avenue  
Sunnyvale, CA 94085  
Tel: (408) 737-8100 x136  
Fax: (408) 737-8153